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Patent Abstracts of Japan

PUBLICATION NUMBER : 07252592
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APPLICATION DATE : 15-03-94
APPLICATION NUMBER : 06082185

APPLICANT : NIPPON STEEL CORP;

INVENTOR : WAKITA JUNICHI;

INT.CL. : C22C 38/00 C22C 38/06

TITLE : HOT ROLLED HIGH STRENGTH STEEL SHEET EXCELLENT IN FORMABILITY, LOW TEMPERATURE TOUGHNESS AND FATIGUE PROPERTY

ABSTRACT : PURPOSE: To stably produce a hot rolled high strength steel sheet excellent in formability, low temp. toughness and fatigue properties at a low cost.

CONSTITUTION: This steel sheet has a compsn. contg., as chemical components, by weight, 0.05 to <0.25% C, 0.5 to 3.5% Si+Al, 0.5 to 3.5% Mn, ≤0.05% P, ≤0.01% S and Fe as essential components, has a microstructure of three phases of ferrite, bainite and retained austenite as main phases, in which the content of ferrite having ≥150 Vickers hardness and ≤5μm grain size is regulated to ≥50% and the content of retained austenite having ≥0.9% carbon concn. and ≤2μm grain size is regulated to ≥5% and has characteristics of tensile strength (TS)=490 to 1180MPa, the balance of strength-ductility (tensile strength μtotal elongation) of ≥20000 (Mpa.%), the balance of strength-stretch flanging properties (tensile strength × bore expanding ration ≥75000 (MPa.%), fracture appearance transition temp. of ≤-40°C and fatigue limit ratio of ≥0.45.

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